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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Dennis Richard Hayward

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EXAMINER

RODRIGUEZ, PAMELA

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/595,201	Applicant(s) HAYWARD ET AL.	
	Examiner Pam Rodriguez	Art Unit 3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-19 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/27/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Amendment filed May 4, 2007 has been received and considered. In light of the new grounds of rejection present in this office action, a new second NON-FINAL office action has been issued herewith.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 16, 18, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,119,825 to Nisley.

Regarding Claim 16, Nisley discloses a brake assembly 12 for a motor 10 (see Figures 1 and 4) having all the features of the instant invention including: a plurality of brake elements 34,46, an electromagnetic actuator 24 arranged to permit control of a compressive load applied to the brake elements 34,46, wherein the actuator includes a winding 24 located such that the brake elements 34,46 are accessible without requiring removal of the winding from the motor 10 (see column 4 lines 21-27 and note loosening of bolts 26 would provide accessibility to the brake elements without removal of the winding structure, see also Figure 1).

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Regarding Claim 18, Nisley discloses that the brake elements 34, 46 form part of a module 12 which can be removed from the motor 10 and the remainder of the brake assembly as a unit (again via the loosening of bolts 26).

Regarding Claim 19, Nisley discloses that the module 12 includes an armature 40 forming part of the actuator 24 (see column 4 lines 36-38).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,119,825 to Nisley.

Regarding Claim 17, Nisley discloses most all the features of the instant invention as outlined above except for the winding being located between the brake elements and the motor.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have located the winding of Nisley between the brake elements and motor as an alternate location for the windings dependent upon the overall size constraints of the brake assembly and the motor.

6. Claims 1-3, 5-11, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,119,825 to Nisley in view of British Patent No. 2155809 to Hartley.

Regarding Claims 1-3, Nisley discloses a brake assembly 12 for a motor 10 (see Figures 1 and 4) having most all the features of the instant invention including: a stack of brake elements 34/46 (note claim 5 where the stack is defined as comprising just two brake elements), at least one 34 of which is rotatable with an output shaft of the motor 10 (see column 4 lines 31-32), and at least one 46 of which is non-rotatable relative to a housing 20 (see column 4 lines 43-45), and an actuator arrangement 24 for controlling the magnitude of a compressive load applied to the brake elements 34,46.

However, Nisley does not disclose that the brake elements are provided, at least in part, with a surface coating which raises the coefficient of friction of the brake elements to a value greater than .2, to a value of at least .5 falling in the range of .5 to .6.

Hartley is relied upon merely for his teachings of a brake assembly (see the abstract) having a braking element provided with a surface coating which raises the coefficient of friction of the braking element to a value greater than .2, to a value of at least .5, falling in the range of .5 to .6 (see the table on page 3 of the patent).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the brake elements of Nisley with a surface coating which raises the coefficient of friction of the brake elements to the claimed values as taught by Hartley to increase the overall performance of the brake assembly. By improving the coefficient of friction of the braking element to be greater than .2 or between .5 and .6, the wear life of the braking elements would be increased and thus the brake assembly would operate longer and more efficiently.

Regarding Claim 5, Nisley, as modified, further discloses that the stack of brake elements 34, 46 takes the form of a first brake element 34 which is rotatable with the output shaft of the motor in use (see column 4 lines 31-32) and a second brake element 46 which is non-rotatable relative to the housing 20 (see column 4 lines 43-45).

Regarding Claim 6, Nisley, as modified, discloses that the second brake element 46 forms part of a cap forming part of the housing 20 (see Figure 4, where element 46 is readable as acting as a cover/cap for the assembly).

Regarding Claim 7, Nisley, as modified, discloses an arrangement 42 for preventing contact between the first and second brake elements 34,46 (see column 4 line 63-column 5 line 7) when the actuator 24 is actuated.

Regarding Claim 8, Nisley, as modified, discloses that the arrangement for preventing contact between the first and second brake elements includes a secondary spring 42 for biasing the first brake element 34 away from the second brake element 46 (see column 4 line 63-column 5 line 7), wherein the secondary spring 42 provides a biasing force which exceeds the weight of the first brake element 34 (inherently true to maintain the biasing force).

Regarding Claim 9, Nisley, as modified, discloses that the actuator 24 is an electromagnetic actuator arranged to act against a primary spring 44, the spring force due to the secondary spring 42 being sufficient to overcome the weight of the first brake element 34 but being less than the spring force due to the primary spring (see column 4 lines 63-66).

Regarding Claim 10, Nisley, as modified, discloses that the arrangement for preventing contact between the first and second brake elements also comprises a stop member 48 arranged to limit axial movement of the first brake element 34 relative to an armature 40 forming part of the actuator 24 (see column 4 line 66- column 5 line 22).

Regarding Claim 11, Nisley, as modified, discloses that the stop member takes the form of a shoulder 52 provided on a rotor shaft 14 which is rotatable with the output shaft of the motor 10 (see Figure 4).

Regarding Claim 13, Nisley, as modified, discloses that at least one of the brake elements comprises a brake disc 34.

Regarding Claim 14, Nisley, as modified, discloses that the actuator comprises an electromagnetic actuator 24 arranged to act against a primary spring 44.

Regarding Claim 15, Nisley, as modified, discloses that the electromagnetic actuator includes a winding 24 located such that the brake elements are accessible without requiring removal of the winding from the motor (see column 4 lines 21-27 and claim 16 above).

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,119,825 to Nisley in view of British Patent No. 2155809 to Hartley as applied to claims 1-3, 5-11, and 13-15 above, and further in view of U.S. Patent No. 4,715,486 to Burgdorf et al.

Regarding Claim 4, Nisley, as modified, discloses most all the features of the instant invention as applied above except for the surface coating being tungsten carbide forming a layer of thickness falling within the range of .64 mm to 1.27 mm.

Burgdorf et al are relied upon merely for their teachings of a braking element with a surface coating of tungsten carbide forming a layer of thickness on the braking element (see the abstract and column 2 lines 58-61).

Regarding the tungsten carbide, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the surface coating of Nisley, as modified, to be tungsten carbide as taught by Burgdorf et al so that the braking element can be formed of a more wear resistant material to improve the overall life of the braking element.

Regarding the layer of thickness, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied the coating of Nisley, as modified, in a layer of thickness falling within the range of .64 mm to 1.27 mm

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dependent upon the desired friction characteristics of the braking elements. By applying a thicker layer of coating to the braking elements, the better the overall frictional wear characteristics will be.

Allowable Subject Matter

8. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments filed May 4, 2007 regarding Claim 16 have been fully considered but they are not persuasive.

Regarding Claim 16, applicant argues that Nisley does not teach a winding element that is located such that the brake elements are accessible without requiring removal of the winding from the motor.

In response to this, the examiner contends that Figure 3 of Nisley shows that brake elements 46/34/40 are separate from housing 20 which accommodates winding 24 as indicated by the spacing between element 40 and the leftmost side of housing 20. Thus, it appears that removal of post 26 would allow access to the brake elements 46/34/40 as they slide along post 26 leaving housing 20 with winding 24 to remain on the post separate from these brake elements. Therefore, at least to this extent, the claim limitation is still met.

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10. Applicant's arguments, see the response, filed May 4, 2007, with respect to the rejection(s) of claim(s) 17 under 102(e) of the Nisley reference have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of Nisley under 35 U.S.C. 103(a) as outlined in paragraph 5 above.

11. Applicant's arguments, see the response, filed May 4, 2007, with respect to the rejection(s) of claim(s) 1 under 35 U.S.C. 103(a) using the Nisley and Burgdorf et al references have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of British Patent 2155809 to Hartley as outlined in paragraph 6 above.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pam Rodriguez whose telephone number is 571-272-7122. The examiner can normally be reached on Tuesdays 5 AM -11 AM and Wednesdays 5 AM -4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rob Siconolfi can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Pam Rodriguez
Primary Examiner
Art Unit 3683

/Pam Rodriguez/
Primary Examiner, Art Unit 3683
08/13/08